HARSHIT SOHANEY

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HIGHLIGHTS OF QUALIFICATIONS

A: Advanced, I: Intermediate, B: Beginner

- **Languages & Tools:** C/C++ [A], MATLAB [I], HTML/CSS [A], JavaScript [A], SQL [A], LINQ [I], Verilog (HDL) [B], AngularJS [I], Git [I], C# [I], JQuery [I]
- **Technical Skills:** Google Cloud Platform [I], Quartus II [B], Code-V [B], Microcontrollers [I], Object-Oriented Programming [A], Linux [B], .NET Development [I], STM32CUBE [I]

EDUCATION

Bachelor of Applied Science, Major in Computer Engineering — University of Toronto, St. George

Sept 2020 – Apr 2025

- Minor in Artificial Intelligence Engineering
- **Courses:** Engineering Design, Software Communication, Operating Systems, Algorithms & Data Structures, Introduction to Deep Learning, Digital Systems, Linear Algebra, Probability and Statistics, Ethics in AI
- **Positions:** ECE Ambassador, UofTHacks - Sponsorship Executive, Digital Society Collective - Events Director, Learn AI - Curriculum Content Lead, ECE Club - Events Director, UofT Aerospace Design Team - Firmware & Optics

PROFESSIONAL EXPERIENCE

Application Development Co-op — Softchoice Corp.

May 2022 – August 2022 Toronto, ON, CA

- Improved the frontend and backend for Single Page Applications (SPA) on the company portal using .NET Core
- Optimized Keystone API logging tables with Object Relational Mapping (ORM) using LINQ to SQL queries to improve access time from 30 seconds to 2 seconds
- Implemented a dynamic sub-grid by creating API endpoints to assist in determining development time and creating development tasks

ENGINEERING PROJECTS

Personal Website — Independent Project

August 2022 - Present

- Designed a website using HTML/CSS, Javascript and Bootstrap to display my achievements and experience with an interactive user interface inspired by the Spotify Desktop UI
- Implementing features such as a music player and an AI recommendation system using the Spotify API
- Exploring software design principles such as repository and decorator design patterns to improve workflow of the project

GIS Mapping System — University of Toronto ECE297

January 2022 - May 2022 University of Toronto, ON, CA

- Developed a city mapping system using the OpenStreetMap database with C++. Improved speed by 98% by employing various strategies with data structure manipulation
- Applied algorithms such as Breadth First Search, Dijkstra's, and A* to optimize pathfinding and included various features to accompany the algorithms (directions, subways, search bar)
- Employed various algorithms to find an optimum solution to the Travelling Salesman Problem. Implemented heuristic algorithms such as 2-opt and Simulated Annealing to improve the quality of result

AI Explainability 360 for AI and ML — IBM

September 2022

- Familiarized myself with various explainability algorithms such as contrastive explanations and generalized linear rule models
- Expanded my understanding of Artificial Intelligence ethics and gained intuition for privacy and transparency in the emerging field of explainable AI

Co-Creator - Air-ReCharging **Independent Project**

March 2021 - November 2021 Toronto, ON, CA

- Researched on a new rechargeable battery that uses the Earth's magnetic field to self-charge and power electric aviation
- Obtained second place at the ENACTUS UofT Innovation Pitch Competition against 30 other innovative teams
- Accepted into the ICUBE LEAP Startup League to improve our business model and move further with the venture by completing various worksheets and modules on startup entrepreneurship

Project Lead - Boomerang **Google Solution Challenge**

December 2020 - May 2021 University of Toronto, ON, CA

- Applied SCRUM management techniques to coordinate a team of 4 in prototyping a web-app hosting the lost and found system of Toronto for pets and items, a
- Designed a real time database using Firestore to keep track of all reports received and illustrated the get methodology
- Integrated and constructed multiple parts of the website using JavaScript to centralize all components of the application
- Demonstrated the result in a presentation: https://www.youtube.com/watch?v=mYoJ8DSOkNYt=3s

Self Guided - Fake News Detection AI **Coursera**

May 2020

- Trained a LSTM network using Natural Language Processing tools such as tensorflow, gensim, nltk, pandas, keras
- Gained an understanding of Machine Learning concepts and received a 100% score on the final quiz

ACHIEVEMENTS

- **Dean's list** at the University of Toronto - Winter 2020, Fall 2021, Winter 2021
- **Second place prize winner** at ENACTUS UofT Innovation Pitch Competition for a social venture based on electric aviation
- **School Medal** for scoring the highest score on the University of Waterloo Euclid Mathematics Exam within the school
- **Trinity College London - Plectrum** Grade 7 Guitarist with merit

PUBLICATIONS

FINCH: A Blueprint for Accessible and Scientifically Valuable Remote Sensing Satellite Missions **UTAT**

August 2022

Miscellaneous Interests: I enjoy playing the Guitar and Piano, reading books (love talking about them too!), and play chess